REMARKS

Claims 1 – 3, 5– 15, 17, 18, 20, 22 – 26 and 30 – 33 are in the application and are presented for consideration. By this amendment, Applicant has amended claims 1, 3, 7, 9, 10, 11, 13, 15 and 23. Claims 4, 28 and 29 have been canceled.

Applicant wishes to thank the Examiner for the courtesy of a telephone interview on January 13, 2011. As discussed between Applicant's representative and the Examiner during this interview, Applicant has now made changes to claims 1 and 9 to further specify aspects of the invention. Similar changes have been made to claims 10 and 23. Further, new claims 32 and 33 have been added. These claims present subject matter similar to claims 9 and 23, but they depend from claims 30 and 31 respectively.

Claims 5 and 14 have been rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. "machine readable medium".

Applicant respectfully requests reconsideration of this rejection. Each of these claims depend from a claim which is clearly directed to statutory subject matter. As such, a claim which further limits the claim which is directed to statutory subject matter should also be considered to be directed to statutory subject matter. Further, the claims in question positively recite further features of the process or device with this also being statutory subject matter. It is requested that this rejection be removed.

Claim 23 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is Applicant's position that claim 23 is clear and definite as now presented. Accordingly, it is requested that this rejection be removed.

Claims 1, 10 &20 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is Applicant's position that claim 1, 10 &20 are clear and definite as now presented. Accordingly, it is requested that this rejection be removed.

Claims 1,4, 5, 8, 10, 13, 14, 18, 21-22, 26, and 28 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel (US Re.34597) in view of Ichisa (US 6555784 82).

Applicant respectfully traverses this rejection and requests reconsideration, particularly in view of the claims as now submitted. The prior art as a whole fails to teach and fails to suggest several aspects of the invention. It is Applicant's position that the rejection does not present a prima facie case of obviousness.

Akeel teaches a robot laser system to provide a laser source and coupled movable channels with mirrors for conveying laser light (conveying the laser beam) to an outlet location for machining. With Akeel there is an internal guiding of the laser light and no laser tool at the end of a manipulator hand. It is noted that Akeel does not teach or suggest that the disclosed embodiment has a power source in which laser power can be controlled. Indeed, the reference at column 1, line 44 to "regulating the laser power" is with reference to the prior art (background art). As such, the rejection appears to be based on a further combination, namely Akeel in view of the discussion of a prior art laser power regulating device and further in view

of the stated secondary reference Ichisa et al. Akeel does not teach and does not suggest a welding device or process in which the laser beam is deflected in combination with movement of the robot hand holding the laser tool.

Ichisa et al. teaches a laser machining apparatus which has a plurality of laser generators with generate laser beams that are combined and passed along a fiber-optic cable. The cable has various different splitters (OP1, OP2, OP3...) that split off a portion of the guided laser beam. In this way, a laser tool (TL1, TL2, TL3...) at any of the particular robots (RB 1, RB 2, RB 3...) can be selectively supplied with a laser beam so as to selectively feed laser tools which are to be operational and to not send the laser beam to tools which are not operational. Ichisa et al. fails to teach varying power of the laser beam which is emitted by any one of the tools as a function of a movement of the laser beam on the workpiece .

According to Ichisa et al., energy is supplied which is adequate to weld a particular workpiece. The system controls the whole laser output but does not control the individual power output at a laser tool, except for either feeding the laser beam to the laser tool or not feeding the laser beam to the tool. Further, with the teachings of each of the references, no control of power output is possible which is dependent on an angle of the laser beam on the workpiece. The references do not teach these features and do not appear to provide the possibility of such power control.

With laser machining, such as laser welding, a laser beam is normally applied on the surface of the workpiece and this is typically at about a 90° angle relative to the workpiece surface (normal to the workpiece surface). With the invention, short quick movements are

possible resulting in the laser beam hitting the workpiece at an angle including angles which are other than 90° (see Figures 7 through 12). In this case, the power of the laser that acts on the surface of the workpiece depends on the beam movement including the incident angle. The invention controls the laser power at the tool based on the movement of the laser beam relative to the surface of the workpiece (as a function of overall laser movement on the workpiece including the angle of incidence). This allows an even and uniform machining and also allows for significant efficiency and speed improvements as compared to the prior art.

The references fail to suggest the combination as claimed. Accordingly, it is requested that the rejection be reconsidered based on the claims as now presented and based on the discussion above.

Claims 7 and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of Iehisa and Ishiguro (US 4831316).

As noted, the primary and secondary references together fail to teach and fail to suggest the subject matter of the claims on which claims 7 and 17 depend. The rejection of claims 7 and 17 does not present a prima facie case of obviousness. Accordingly, it is requested that the rejection be reconsidered based on the claims as now presented and based on the discussion above.

Claims 2, 3, 11-12 &29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of Iehisa and Briand (US 6603092 B2).

Briand has been cited for disclosing robots and a laser beam deflection motion during welding (Briand-col.3, lines 4-9; col.6, lines 11-27). However, Applicant cannot find any

mention in the Briand reference of deflecting the laser beam to vary an angle of incidence of the laser beam on the workpiece. The combination of teachings of the prior art does not provide suggestions or motivation for the person of ordinary skill in the art to combine the features as claimed. The rejection does not present a prima facie case of obviousness. Accordingly, it is requested that the rejection be reconsidered based on the claims as now presented and based on the discussion above.

Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of Iehisa, Briand, and Hamada (US 6888096 B1).

Hamada is cited for disclosing a controllable laser oscillator based machining apparatus with the ability to generate a cross-sectional energy distribution. However, the combination of teachings does not suggest controlling power of the laser beam based on the motion of the laser beam relative to the workpiece including based on the angle of incidence of the laser beam. Further, the prior art does not disclose a common controller which controls a variation of laser beam power and controls a manipulator with the power varying based on the movement of the laser beam including the angle of incidence of the laser beam on the workpiece. As such, the references do not suggest controlling these features in concert to set the section energy to be introduced into the workpiece. The rejection does not present a prima facie the case of obviousness. Accordingly, it is requested that the rejection be reconsidered based on the claims as now presented and based on the discussion above.

Claims 9, 23, and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of Iehisa and Ortiz, Jr. (US 5245682).

Applicant respectfully traverses the rejection and requests reconsideration of the rejection in view of the claims as now presented. The references fail to teach and fail to suggest a switching or an adjustment of the focal distance in cooperation with the other features claimed, including displacing the laser beam with a displacing motion and deflecting the laser beam to vary an angle of incidence of the laser beam on the workpiece. The rejection does not present a prima facie the case of obviousness. Accordingly, it is requested that the rejection be reconsidered based on the claims as now presented and based on the discussion above.

Claim 25 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of Ichisa and Maruyama et al (US 6100497).

As noted, the primary and secondary references together fail to teach and fail to suggest the subject matter of claim 13. The rejection of claim 25 does not present a prima facie case of obviousness. Accordingly, it is requested that the rejection be reconsidered based on the claims as now presented and based on the discussion above.

Further and favorable action on the merits is requested.

Respectfully submitted
for Applicant,

By:_____
John James McGlew
Registration No. 31,903
McGLEW AND TUTTLE, P.C.

JJM:jj

SHOULD ANY OTHER FEE BE REQUIRED, THE PATENT AND TRADEMARK OFFICE IS HEREBY REQUESTED TO CHARGE SUCH FEE TO OUR DEPOSIT ACCOUNT 13-0410.

DATED: January 14, 2011

McGLEW AND TUTTLE, P.C.
BOX 9227 SCARBOROUGH STATION
SCARBOROUGH, NEW YORK 10510-9227
TELEPHONE: (914) 941-5600
FACSIMILE: (914) 941-5855